

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

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Tel: (713)690-4444

TestAmerica Job ID: 600-109297-2

Client Project/Site: CB&I Federal Services LLC . WC

For:

CB&I Federal Services LLC

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4/16/2015 3:34:39 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Method Summary	4
Sample Summary	5
Client Sample Results	6
Definitions/Glossary	7
Surrogate Summary	8
QC Sample Results	10
QC Association Summary	14
Lab Chronicle	15
Certification Summary	16
Chain of Custody	17
Receipt Checklists	19



Case Narrative

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Job ID: 600-109297-2

Laboratory: TestAmerica Houston

Narrative

Job Narrative 600-109297-2

Comments

No additional comments.

Receipt

The samples were received on 4/2/2015 5:52 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.9° C, 1.6° C, 1.8° C and 2.3° C.

Except:

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

GC/MS VOA

Method(s) 8260B: The matrix spike duplicate (MSD) recoveries for 137977 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

The following samples could not be analyzed for TSS due to the matrix being Waste:

B 25206-25274 (600-109297-4), FT 1001 (600-109297-6), Group 6 (600-109297-7) and Group 7 (600-109297-8)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Geotechnical

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Sample Summary

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-109297-5	Carbon Unit	Solid	04/02/15 09:52	04/02/15 17:52

Client Sample Results

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Client Sample ID: Carbon Unit

Lab Sample ID: 600-109297-5

Date Collected: 04/02/15 09:52

Matrix: Solid

Date Received: 04/02/15 17:52

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.0426	U	0.200	0.0426	mg/L			04/09/15 09:17	1
1,2-Dichloroethane	0.0384	U	0.200	0.0384	mg/L			04/09/15 09:17	1
2-Butanone (MEK)	0.0434	U F2	0.200	0.0434	mg/L			04/09/15 09:17	1
Benzene	0.0396	U F2	0.200	0.0396	mg/L			04/09/15 09:17	1
Carbon tetrachloride	0.0433	U	0.200	0.0433	mg/L			04/09/15 09:17	1
Chlorobenzene	0.0210	U	0.200	0.0210	mg/L			04/09/15 09:17	1
Chloroform	0.0403	U F1 F2	0.200	0.0403	mg/L			04/09/15 09:17	1
Tetrachloroethene	0.0330	U	0.200	0.0330	mg/L			04/09/15 09:17	1
Trichloroethene	0.0320	U F1 F2	0.200	0.0320	mg/L			04/09/15 09:17	1
Vinyl chloride	0.0516	U F1	0.200	0.0516	mg/L			04/09/15 09:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		80 - 120		04/09/15 09:17	1
1,2-Dichloroethane-d4 (Surr)	83		62 - 123		04/09/15 09:17	1
4-Bromofluorobenzene (Surr)	89		75 - 120		04/09/15 09:17	1
Dibromofluoromethane (Surr)	106		80 - 120		04/09/15 09:17	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.00890	U	0.0500	0.00890	mg/L		04/15/15 11:25	04/15/15 15:13	1
2,4-Dinitrotoluene	0.0132	U	0.0500	0.0132	mg/L		04/15/15 11:25	04/15/15 15:13	1
2,4,5-Trichlorophenol	0.0136	U	0.0500	0.0136	mg/L		04/15/15 11:25	04/15/15 15:13	1
2,4,6-Trichlorophenol	0.0129	U	0.0500	0.0129	mg/L		04/15/15 11:25	04/15/15 15:13	1
2-Methylphenol	0.00905	U	0.0500	0.00905	mg/L		04/15/15 11:25	04/15/15 15:13	1
3 & 4 Methylphenol	0.00940	U	0.100	0.00940	mg/L		04/15/15 11:25	04/15/15 15:13	1
Hexachlorobenzene	0.0130	U	0.0500	0.0130	mg/L		04/15/15 11:25	04/15/15 15:13	1
Hexachlorobutadiene	0.0106	U	0.0500	0.0106	mg/L		04/15/15 11:25	04/15/15 15:13	1
Hexachloroethane	0.0110	U	0.0500	0.0110	mg/L		04/15/15 11:25	04/15/15 15:13	1
Nitrobenzene	0.0124	U	0.0500	0.0124	mg/L		04/15/15 11:25	04/15/15 15:13	1
Pentachlorophenol	0.0231	U	0.250	0.0231	mg/L		04/15/15 11:25	04/15/15 15:13	1
Pyridine	0.0108	U	0.0500	0.0108	mg/L		04/15/15 11:25	04/15/15 15:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5	38		10 - 130	04/15/15 11:25	04/15/15 15:13	1
Nitrobenzene-d5	68		35 - 130	04/15/15 11:25	04/15/15 15:13	1
2-Fluorophenol	53		10 - 130	04/15/15 11:25	04/15/15 15:13	1
2-Fluorobiphenyl	82		41 - 130	04/15/15 11:25	04/15/15 15:13	1
2,4,6-Tribromophenol	100		12 - 138	04/15/15 11:25	04/15/15 15:13	1
Terphenyl-d14	86		43 - 130	04/15/15 11:25	04/15/15 15:13	1

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Definitions/Glossary

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F2	MS/MSD RPD exceeds control limits
F1	MS and/or MSD Recovery exceeds the control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Surrogate Summary

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (62-123)	BFB (75-120)	DBFM (80-120)
LCS 180-137977/18	Lab Control Sample	87	91	95	104
Surrogate Legend					
TOL = Toluene-d8 (Surr)					
12DCE = 1,2-Dichloroethane-d4 (Surr)					
BFB = 4-Bromofluorobenzene (Surr)					
DBFM = Dibromofluoromethane (Surr)					

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (62-123)	BFB (75-120)	DBFM (80-120)
600-109297-5	Carbon Unit	89	83	89	106
600-109297-5 MS	Carbon Unit	87	80	99	97
600-109297-5 MSD	Carbon Unit	80	86	98	109
LB 180-137908/6-A	Method Blank	89	88	96	111
Surrogate Legend					
TOL = Toluene-d8 (Surr)					
12DCE = 1,2-Dichloroethane-d4 (Surr)					
BFB = 4-Bromofluorobenzene (Surr)					
DBFM = Dibromofluoromethane (Surr)					

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		PHL (10-130)	NBZ (35-130)	2FP (10-130)	FBP (41-130)	TBP (12-138)	TPH (43-130)
LCS 600-160241/2-A	Lab Control Sample	76	72	74	88	111	86
MB 600-160241/1-A	Method Blank	75	76	80	93	103	93
Surrogate Legend							
PHL = Phenol-d5							
NBZ = Nitrobenzene-d5							
2FP = 2-Fluorophenol							
FBP = 2-Fluorobiphenyl							
TBP = 2,4,6-Tribromophenol							
TPH = Terphenyl-d14							

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		PHL (10-130)	NBZ (35-130)	2FP (10-130)	FBP (41-130)	TBP (12-138)	TPH (43-130)
600-109297-5	Carbon Unit	38	68	53	82	100	86
600-109297-5 MS	Carbon Unit	53	80	61	103	129	109

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Surrogate Summary

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		PHL (10-130)	NBZ (35-130)	2FP (10-130)	FBP (41-130)	TBP (12-138)	TPH (43-130)
LB 600-160192/1-B	Method Blank	39	65	50	79	110	90

Surrogate Legend

PHL = Phenol-d5

NBZ = Nitrobenzene-d5

2FP = 2-Fluorophenol

FBP = 2-Fluorobiphenyl

TBP = 2,4,6-Tribromophenol

TPH = Terphenyl-d14

QC Sample Results

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 180-137977/18

Matrix: Solid

Analysis Batch: 137977

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.400	0.3965		mg/L		99	69 - 127
1,2-Dichloroethane	0.400	0.3843		mg/L		96	63 - 140
2-Butanone (MEK)	0.400	0.3875		mg/L		97	31 - 139
Benzene	0.400	0.3639		mg/L		91	80 - 120
Carbon tetrachloride	0.400	0.4161		mg/L		104	63 - 139
Chlorobenzene	0.400	0.3556		mg/L		89	83 - 120
Chloroform	0.400	0.4247		mg/L		106	77 - 119
Tetrachloroethene	0.400	0.3664		mg/L		92	78 - 126
Trichloroethene	0.400	0.4165		mg/L		104	80 - 120
Vinyl chloride	0.400	0.4198		mg/L		105	57 - 128

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	87		80 - 120
1,2-Dichloroethane-d4 (Surr)	91		62 - 123
4-Bromofluorobenzene (Surr)	95		75 - 120
Dibromofluoromethane (Surr)	104		80 - 120

Lab Sample ID: LB 180-137908/6-A

Matrix: Solid

Analysis Batch: 137977

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.0107	U	0.0500	0.0107	mg/L			04/09/15 08:47	1
1,2-Dichloroethane	0.00959	U	0.0500	0.00959	mg/L			04/09/15 08:47	1
2-Butanone (MEK)	0.0108	U	0.0500	0.0108	mg/L			04/09/15 08:47	1
Benzene	0.00989	U	0.0500	0.00989	mg/L			04/09/15 08:47	1
Carbon tetrachloride	0.0108	U	0.0500	0.0108	mg/L			04/09/15 08:47	1
Chlorobenzene	0.00526	U	0.0500	0.00526	mg/L			04/09/15 08:47	1
Chloroform	0.0101	U	0.0500	0.0101	mg/L			04/09/15 08:47	1
Tetrachloroethene	0.00825	U	0.0500	0.00825	mg/L			04/09/15 08:47	1
Trichloroethene	0.00801	U	0.0500	0.00801	mg/L			04/09/15 08:47	1
Vinyl chloride	0.0129	U	0.0500	0.0129	mg/L			04/09/15 08:47	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		80 - 120		04/09/15 08:47	1
1,2-Dichloroethane-d4 (Surr)	88		62 - 123		04/09/15 08:47	1
4-Bromofluorobenzene (Surr)	96		75 - 120		04/09/15 08:47	1
Dibromofluoromethane (Surr)	111		80 - 120		04/09/15 08:47	1

Lab Sample ID: 600-109297-5 MS

Matrix: Solid

Analysis Batch: 137977

Client Sample ID: Carbon Unit

Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	0.0426	U	1.60	1.251		mg/L		78	69 - 127
1,2-Dichloroethane	0.0384	U	1.60	1.343		mg/L		84	63 - 140
2-Butanone (MEK)	0.0434	U F2	1.60	1.213		mg/L		76	31 - 139

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QC Sample Results

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 600-109297-5 MS

Matrix: Solid

Analysis Batch: 137977

Client Sample ID: Carbon Unit

Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0396	U F2	1.60	1.281		mg/L		80	80 - 120
Carbon tetrachloride	0.0433	U	1.60	1.527		mg/L		95	63 - 139
Chlorobenzene	0.0210	U	1.60	1.478		mg/L		92	83 - 120
Chloroform	0.0403	U F1 F2	1.60	1.612		mg/L		101	77 - 119
Tetrachloroethene	0.0330	U	1.60	1.437		mg/L		90	78 - 126
Trichloroethene	0.0320	U F1 F2	1.60	1.542		mg/L		96	80 - 120
Vinyl chloride	0.0516	U F1	1.60	1.726		mg/L		108	57 - 128
Surrogate	MS %Recovery	MS Qualifier	Limits						
Toluene-d8 (Surr)	87		80 - 120						
1,2-Dichloroethane-d4 (Surr)	80		62 - 123						
4-Bromofluorobenzene (Surr)	99		75 - 120						
Dibromofluoromethane (Surr)	97		80 - 120						

Lab Sample ID: 600-109297-5 MSD

Matrix: Solid

Analysis Batch: 137977

Client Sample ID: Carbon Unit

Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	0.0426	U	1.60	1.468		mg/L		92	69 - 127	16	20
1,2-Dichloroethane	0.0384	U	1.60	1.721		mg/L		108	63 - 140	25	25
2-Butanone (MEK)	0.0434	U F2	1.60	1.801	F2	mg/L		113	31 - 139	39	35
Benzene	0.0396	U F2	1.60	1.636	F2	mg/L		102	80 - 120	24	20
Carbon tetrachloride	0.0433	U	1.60	1.837		mg/L		115	63 - 139	18	25
Chlorobenzene	0.0210	U	1.60	1.645		mg/L		103	83 - 120	11	20
Chloroform	0.0403	U F1 F2	1.60	2.057	F1 F2	mg/L		129	77 - 119	24	20
Tetrachloroethene	0.0330	U	1.60	1.747		mg/L		109	78 - 126	19	25
Trichloroethene	0.0320	U F1 F2	1.60	1.988	F1 F2	mg/L		124	80 - 120	25	20
Vinyl chloride	0.0516	U F1	1.60	2.064	F1	mg/L		129	57 - 128	18	26
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Toluene-d8 (Surr)	80		80 - 120								
1,2-Dichloroethane-d4 (Surr)	86		62 - 123								
4-Bromofluorobenzene (Surr)	98		75 - 120								
Dibromofluoromethane (Surr)	109		80 - 120								

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 600-160241/1-A

Matrix: Solid

Analysis Batch: 160231

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 160241

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.00178	U	0.0100	0.00178	mg/L		04/15/15 11:25	04/15/15 13:41	1
2,4-Dinitrotoluene	0.00263	U	0.0100	0.00263	mg/L		04/15/15 11:25	04/15/15 13:41	1
2,4,5-Trichlorophenol	0.00271	U	0.0100	0.00271	mg/L		04/15/15 11:25	04/15/15 13:41	1
2,4,6-Trichlorophenol	0.00259	U	0.0100	0.00259	mg/L		04/15/15 11:25	04/15/15 13:41	1

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QC Sample Results

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 600-160241/1-A

Matrix: Solid

Analysis Batch: 160231

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 160241

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	0.00181	U	0.0100	0.00181	mg/L		04/15/15 11:25	04/15/15 13:41	1
3 & 4 Methylphenol	0.00188	U	0.0200	0.00188	mg/L		04/15/15 11:25	04/15/15 13:41	1
Hexachlorobenzene	0.00259	U	0.0100	0.00259	mg/L		04/15/15 11:25	04/15/15 13:41	1
Hexachlorobutadiene	0.00212	U	0.0100	0.00212	mg/L		04/15/15 11:25	04/15/15 13:41	1
Hexachloroethane	0.00220	U	0.0100	0.00220	mg/L		04/15/15 11:25	04/15/15 13:41	1
Nitrobenzene	0.00248	U	0.0100	0.00248	mg/L		04/15/15 11:25	04/15/15 13:41	1
Pentachlorophenol	0.00462	U	0.0500	0.00462	mg/L		04/15/15 11:25	04/15/15 13:41	1
Pyridine	0.00216	U	0.0100	0.00216	mg/L		04/15/15 11:25	04/15/15 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5	75		10 - 130	04/15/15 11:25	04/15/15 13:41	1
Nitrobenzene-d5	76		35 - 130	04/15/15 11:25	04/15/15 13:41	1
2-Fluorophenol	80		10 - 130	04/15/15 11:25	04/15/15 13:41	1
2-Fluorobiphenyl	93		41 - 130	04/15/15 11:25	04/15/15 13:41	1
2,4,6-Tribromophenol	103		12 - 138	04/15/15 11:25	04/15/15 13:41	1
Terphenyl-d14	93		43 - 130	04/15/15 11:25	04/15/15 13:41	1

Lab Sample ID: LCS 600-160241/2-A

Matrix: Solid

Analysis Batch: 160231

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 160241

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	0.0500	0.03959		mg/L		79	57 - 130
2,4-Dinitrotoluene	0.0500	0.05317		mg/L		106	60 - 130
2,4,5-Trichlorophenol	0.0500	0.04647		mg/L		93	51 - 130
2,4,6-Trichlorophenol	0.0500	0.04495		mg/L		90	49 - 130
2-Methylphenol	0.0500	0.03951		mg/L		79	39 - 130
3 & 4 Methylphenol	0.0500	0.04018		mg/L		80	29 - 130
Hexachlorobenzene	0.0500	0.04711		mg/L		94	61 - 130
Hexachlorobutadiene	0.0500	0.04100		mg/L		82	52 - 130
Hexachloroethane	0.0500	0.03948		mg/L		79	52 - 130
Nitrobenzene	0.0500	0.03569		mg/L		71	55 - 130
Pentachlorophenol	0.100	0.08534		mg/L		85	29 - 141
Pyridine	0.0500	0.03012		mg/L		60	10 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Phenol-d5	76		10 - 130
Nitrobenzene-d5	72		35 - 130
2-Fluorophenol	74		10 - 130
2-Fluorobiphenyl	88		41 - 130
2,4,6-Tribromophenol	111		12 - 138
Terphenyl-d14	86		43 - 130

TestAmerica Houston

QC Sample Results

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB 600-160192/1-B

Matrix: Solid

Analysis Batch: 160231

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 160241

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.00890	U	0.0500	0.00890	mg/L		04/15/15 11:25	04/15/15 14:42	1
2,4-Dinitrotoluene	0.0132	U	0.0500	0.0132	mg/L		04/15/15 11:25	04/15/15 14:42	1
2,4,5-Trichlorophenol	0.0136	U	0.0500	0.0136	mg/L		04/15/15 11:25	04/15/15 14:42	1
2,4,6-Trichlorophenol	0.0129	U	0.0500	0.0129	mg/L		04/15/15 11:25	04/15/15 14:42	1
2-Methylphenol	0.00905	U	0.0500	0.00905	mg/L		04/15/15 11:25	04/15/15 14:42	1
3 & 4 Methylphenol	0.00940	U	0.100	0.00940	mg/L		04/15/15 11:25	04/15/15 14:42	1
Hexachlorobenzene	0.0130	U	0.0500	0.0130	mg/L		04/15/15 11:25	04/15/15 14:42	1
Hexachlorobutadiene	0.0106	U	0.0500	0.0106	mg/L		04/15/15 11:25	04/15/15 14:42	1
Hexachloroethane	0.0110	U	0.0500	0.0110	mg/L		04/15/15 11:25	04/15/15 14:42	1
Nitrobenzene	0.0124	U	0.0500	0.0124	mg/L		04/15/15 11:25	04/15/15 14:42	1
Pentachlorophenol	0.0231	U	0.250	0.0231	mg/L		04/15/15 11:25	04/15/15 14:42	1
Pyridine	0.0108	U	0.0500	0.0108	mg/L		04/15/15 11:25	04/15/15 14:42	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5	39		10 - 130	04/15/15 11:25	04/15/15 14:42	1
Nitrobenzene-d5	65		35 - 130	04/15/15 11:25	04/15/15 14:42	1
2-Fluorophenol	50		10 - 130	04/15/15 11:25	04/15/15 14:42	1
2-Fluorobiphenyl	79		41 - 130	04/15/15 11:25	04/15/15 14:42	1
2,4,6-Tribromophenol	110		12 - 138	04/15/15 11:25	04/15/15 14:42	1
Terphenyl-d14	90		43 - 130	04/15/15 11:25	04/15/15 14:42	1

Lab Sample ID: 600-109297-5 MS

Matrix: Solid

Analysis Batch: 160231

Client Sample ID: Carbon Unit

Prep Type: TCLP

Prep Batch: 160241

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	0.00890	U	0.250	0.1984		mg/L		79	57 - 130
2,4-Dinitrotoluene	0.0132	U	0.250	0.2886		mg/L		115	60 - 130
2,4,5-Trichlorophenol	0.0136	U	0.250	0.2797		mg/L		112	51 - 130
2,4,6-Trichlorophenol	0.0129	U	0.250	0.2607		mg/L		104	49 - 130
2-Methylphenol	0.00905	U	0.250	0.2113		mg/L		85	39 - 130
3 & 4 Methylphenol	0.00940	U	0.250	0.2011		mg/L		80	29 - 130
Hexachlorobenzene	0.0130	U	0.250	0.2821		mg/L		113	61 - 130
Hexachlorobutadiene	0.0106	U	0.250	0.2074		mg/L		83	52 - 130
Hexachloroethane	0.0110	U	0.250	0.2050		mg/L		82	52 - 130
Nitrobenzene	0.0124	U	0.250	0.2003		mg/L		80	55 - 130
Pentachlorophenol	0.0231	U	0.500	0.4902		mg/L		98	29 - 141
Pyridine	0.0108	U	0.250	0.06005		mg/L		24	10 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
Phenol-d5	53		10 - 130
Nitrobenzene-d5	80		35 - 130
2-Fluorophenol	61		10 - 130
2-Fluorobiphenyl	103		41 - 130
2,4,6-Tribromophenol	129		12 - 138
Terphenyl-d14	109		43 - 130

TestAmerica Houston

QC Association Summary

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

GC/MS VOA

Leach Batch: 137908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-109297-5	Carbon Unit	TCLP	Solid	1311	
600-109297-5 MS	Carbon Unit	TCLP	Solid	1311	
600-109297-5 MSD	Carbon Unit	TCLP	Solid	1311	
LB 180-137908/6-A	Method Blank	TCLP	Solid	1311	

Analysis Batch: 137977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-109297-5	Carbon Unit	TCLP	Solid	8260B	137908
600-109297-5 MS	Carbon Unit	TCLP	Solid	8260B	137908
600-109297-5 MSD	Carbon Unit	TCLP	Solid	8260B	137908
LB 180-137908/6-A	Method Blank	TCLP	Solid	8260B	137908
LCS 180-137977/18	Lab Control Sample	Total/NA	Solid	8260B	

GC/MS Semi VOA

Leach Batch: 160192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-109297-5	Carbon Unit	TCLP	Solid	1311	
600-109297-5 MS	Carbon Unit	TCLP	Solid	1311	
LB 600-160192/1-B	Method Blank	TCLP	Solid	1311	

Analysis Batch: 160231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-109297-5	Carbon Unit	TCLP	Solid	8270C	160241
600-109297-5 MS	Carbon Unit	TCLP	Solid	8270C	160241
LB 600-160192/1-B	Method Blank	TCLP	Solid	8270C	160241
LCS 600-160241/2-A	Lab Control Sample	Total/NA	Solid	8270C	160241
MB 600-160241/1-A	Method Blank	Total/NA	Solid	8270C	160241

Prep Batch: 160241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-109297-5	Carbon Unit	TCLP	Solid	3510C	160192
600-109297-5 MS	Carbon Unit	TCLP	Solid	3510C	160192
LB 600-160192/1-B	Method Blank	TCLP	Solid	3510C	160192
LCS 600-160241/2-A	Lab Control Sample	Total/NA	Solid	3510C	
MB 600-160241/1-A	Method Blank	Total/NA	Solid	3510C	

Lab Chronicle

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Client Sample ID: Carbon Unit

Date Collected: 04/02/15 09:52

Date Received: 04/02/15 17:52

Lab Sample ID: 600-109297-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			25.00 g	500 mL	137908	04/08/15 12:35	SLM	TAL PIT
TCLP	Analysis	8260B		1	0.125 mL	5 mL	137977	04/09/15 09:17	PJJ	TAL PIT
TCLP	Leach	1311			1.0 g	1.0 mL	160192	04/14/15 17:58	RT1	TAL HOU
TCLP	Prep	3510C			200 mL	1.0 mL	160241	04/15/15 11:25	SMB	TAL HOU
TCLP	Analysis	8270C		1	200 mL	1.0 mL	160231	04/15/15 15:13	KP1	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Certification Summary

Client: CB&I Federal Services LLC
Project/Site: CB&I Federal Services LLC . WC

TestAmerica Job ID: 600-109297-2

Laboratory: TestAmerica Houston

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-15
Analysis Method	Prep Method	Matrix	Analyte	

Laboratory: TestAmerica Pittsburgh

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-15
California	State Program	9	2891	03-31-16
Connecticut	State Program	1	PH-0688	09-30-16
Florida	NELAP	4	E871008	06-30-15
Illinois	NELAP	5	002602	06-30-15
Kansas	NELAP	7	E-10350	04-30-15 *
Louisiana	NELAP	6	04041	06-30-15
New Hampshire	NELAP	1	203011	04-04-16
New Jersey	NELAP	2	PA005	06-30-15
New York	NELAP	2	11182	03-31-16
North Carolina (WW/SW)	State Program	4	434	12-31-15
Pennsylvania	NELAP	3	02-00416	04-30-15 *
South Carolina	State Program	4	89014	04-30-15 *
Texas	NELAP	6	T104704528	03-31-16
US Fish & Wildlife	Federal		LE94312A-1	11-30-15
USDA	Federal		P-Soil-01	05-23-16
Utah	NELAP	8	STLP	05-31-15
Virginia	NELAP	3	460189	09-14-15
West Virginia DEP	State Program	3	142	01-31-16
Wisconsin	State Program	5	998027800	08-31-15

* Certification renewal pending - certification considered valid.

TestAmerica Houston

6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

[illegible]

Loc: 600

109297

Receipt Checklist

JOB NUMBER: _____

Date/Time Received: _____

CLIENT: CBI

UNPACKED BY: _____

CARRIER/DRIVER: AppleCustody Seal Present: ☒ YES ☐ NONumber of Coolers Received: 4

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
BW	Y / N	Y / N	1.7	608	-1	1.6
BW	Y / N	Y / N	1.0	7	7	0.9
BW	Y / N	Y / N	1.9	7	7	1.8
BW	Y / N	Y / N	2.4	7	7	2.3
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☒ YES ☐ NOLABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YESBase samples are > pH 12: ☐ YES ☐ NOAcid preserved are < pH 2: ☐ YES ☐ NO

pH paper Lot #

Waste Sample - pH PAPER ineffectiveVOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ N/A

Did samples meet the laboratory's standard conditions of sample acceptability upon receipt? YES NO

4

COMMENTS:

in
4/2/15

150919

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica

SIGNATURE

DATE

Custody Seal

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

150919

151053

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica

Custody Seal

DATE

SIGNATURE

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

151053

Login Sample Receipt Checklist

Client: CB&I Federal Services LLC

Job Number: 600-109297-2

Login Number: 109297

List Source: TestAmerica Houston

List Number: 1

Creator: Sundquist, Sean V

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	606
Cooler Temperature is recorded.	True	1.6/0.9/1.8/2.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	Waste samples; pH paper ineffective
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: CB&I Federal Services LLC

Job Number: 600-109297-2

Login Number: 109297

List Number: 3

Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh

List Creation: 04/07/15 01:38 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: CB&I Federal Services LLC

Job Number: 600-109297-2

Login Number: 109297

List Number: 4

Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh

List Creation: 04/07/15 01:39 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	